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Obviously undergoing change: Adverbs of evidentiality across time and space

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ABSTRACT

Increasingly globalized communication networks in the modern world may influence traditional patterns of linguistic change: in contrast to an orderly *sequential* pathway of change, more recently a number of “mega trends” have been identified, which accelerate *simultaneously* in time and space. The rise of *obviously* within the cohort of adverbs of evidentiality—*naturally, evidently, clearly, and of course*—may be one such trend. To examine this possibility, we conduct a large-scale sociolinguistic analysis of c12,000 adverbs of evidentiality across over thirty communities in the UK and Canada. The results reveal parallel development across time and space: *obviously* advances rapidly among individuals born in the 1960s in both countries. The rise of *obviously* illustrates key attributes that are beginning to emerge from other rapidly innovating features: “off the shelf” changes that (1) are easily borrowed, (2) receptive to global trends, but (3) exhibit parallel patterns as the change progresses.

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And obviously age, obviously old people and young people speak differently. (London, Evonne, 33, b. 1975)

Over the past sixty years, quantitative sociolinguistic research has sought to understand the processes underlying language variation and change, amassing a significant body of work whose empirical foundations have established a number of largely consistent broad scale principles governing change across time and space. Across time, an S-shaped curve is observed (Blythe & Croft, 2012; Denison, 2003; Kroch, 1989; Labov, 1994), where at the beginning of a change only a few speakers use the incoming form or construction, followed by a middle stage when the change gains ground rapidly among the speakers, and a slower finishing phase in which the vast majority of users have adopted the new form. This S-shaped trajectory has been demonstrated for many types of changes: phonetic (Labov, 1994:67), lexical (Chambers, 1995), morphosyntactic (Nevalainen, 2015), and discourse-pragmatic (Tagliamonte & D'Arcy, 2007), to the point where it is now regarded as a “template for change” (Chambers, 2002:361). Across space, language change is shown to originate in areas of cultural or political dominance (focal areas), subsequently diffusing outward (e.g., Britain, 2004; Bynon, 1977:214; McMahon, 1994:229; Weinreich, 1953/1968:155). A number of models exist that predict how changes take place (e.g., Bailey, Wikle, Tillery, & Sand, 1993; Bloomfield, 1933; Boberg, 2000; Britain, 2002; Labov, 2003; Trudgill, 1974b), but despite differences in detail, in “normal” cases of language change (i.e., those which are not brought about by, for example, large scale migration) (e.g., Otheguy, Zentella, & Livert, 2007), change proceeds sequentially in geographic space. At the same time, in the process of diffusion, linguistic forms undergoing change are said to “mutate en route” (Britain, 2002:482) to their new homes (see also Labov, 2007), developing more localized social and linguistic constraints in the process of change. The evidence arising from studies of linguistic change across time and space has been replicated time and time again, both in the historical record (e.g., Nevalainen & Raumolin-Brunberg, 2003) and in the present day (e.g., Bailey et al., 1993). Diffusion of innovating forms through time and space follow an orderly *sequential* pathway of change. These findings provide the empirical foundations for interpreting and explaining how language change evolves in the world. In such cases, the *Uniformitarian Principle* is invoked where “the forces operating to produce linguistic change today are of the same kind and order of magnitude as those which operated five or ten thousand years ago” (Labov, 1972:275) or that “the (global, cross-linguistic) likelihood of any linguistic state of affairs (structure, inventory, process, etc.) has always been roughly the same as it is now” (Lass, 1997:28).

However, more recently, Trudgill has speculated that change may not proceed in the same way as other times in human history:

Sociolinguistic typology shows us that there is one very important respect in which the present is not like the past at all. This has to do with the enormously rapid development of transport and communications facilities in the past 150 years – but even more importantly, it has to do with demography, and, as a consequence, social network structure [...] the dominant standard modern languages in the world today are likely to be seriously atypical of how languages have been for nearly all of human history. (2011:211)

Indeed, increasingly globalized communication networks in the modern world may have profound influences on the traditional patterns of linguistic change through time and space, such that language evolution may be starting to follow quite different pathways. For example, Tagliamonte and D’Arcy’s (2016) study of the rise of *be like* in the quotative system shows that this innovation “increases at the same time, in the same cohort, in all locales” (Tagliamonte, D’Arcy, & Rodriguez Louro, 2016:831) and displays “no evidence for incremental geographic spread.” Instead, *be like* is claimed to have emerged full-blown at the same juncture in time across a great distance” (Britain, 2002:825). In other words, the change accelerated *simultaneously* in different places. Moreover, in contrast to what is found in cases of diffusion, Tagliamonte et al. (2016: 841) found an “attendant suite of parallel internal linguistic constraints” across all communities. There is no evidence for mutation en route because there is no route. According to the authors, “such a development is unprecedented in the recorded history of language change” (Tagliamonte et al., 2016:825) and suggest that this may be one of many in a suite of yet uncovered “mega trends” (Tagliamonte & Hudson, 1999:168) in language change in the twenty-first century.

A possible kindred of this suite is found within sentential adverbs that encode evidentiality, meanings that allude to an external source of evidence to support the speaker’s statement (e.g., Saeed, 2016; Simon-Vandenberg & Aijmer, 2007) as in (1):

- (1) a. I’ve done tarot cards. Didn’t work, *obviously*.
- b. Years ago, *of course*, they didn’t run cars in the winter.
- c. When the mines were going to shut down, *naturally* the guys—the younger guys—said, “Well, I’m out of here.”
- d. If they thought they were fooling the little kids into thinking there was one Mickey Mouse because *clearly* there wasn’t.
- e. Well, Mother knew we weren’t because *evidently* you could hear us when we were around.

The use of these adverbs of evidentiality as a cohesive group is said to have increased fourfold since Old English (Swan, 1986:2). This is demonstrated in the rising use of *obviously* and *of course* in English fiction since 1800, using Google NGrams:¹

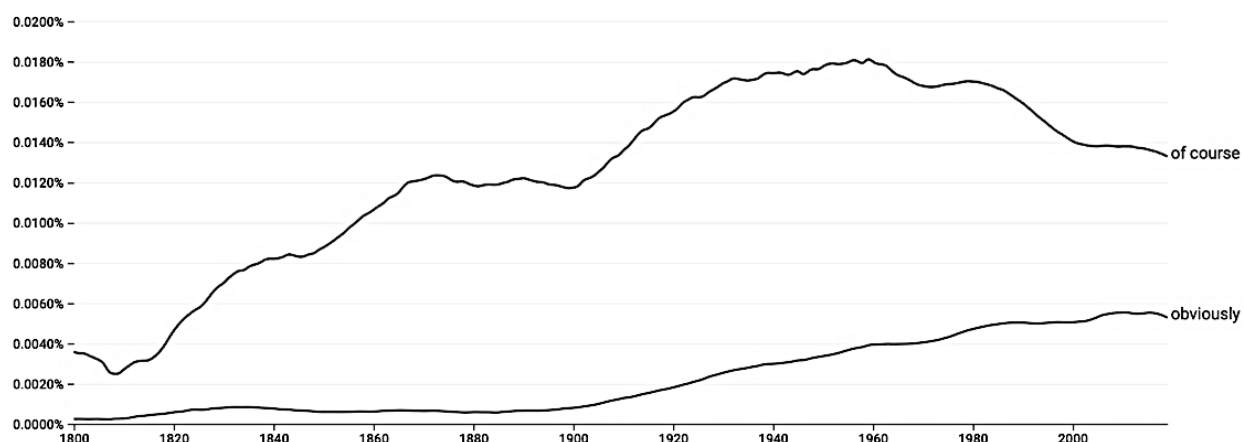


FIGURE 1. Frequency of *obviously* and *of course* in English fiction using Google NGrams.

Figure 1 shows a conspicuous rise in use of these adverbs of evidentiality over the past two hundred years in writing (English fiction). However, the trajectory of change may be quite different in spoken data, where, over the course of the twentieth century, the system shows signs of undergoing a dramatic system-internal reorganization. Even the most casual observation suggests that *obviously* is the adverb of choice in everyday speech: its sheer frequency is notable. It also is singled out for overt (most often negative) commentary in speech, as demonstrated in the extracts from a number of online sources (2-5):

- (2) Reddit
Using the word "*obviously*" unironically is a very quick way to look like a jackass.
Obviously....
https://www.reddit.com/r/Showerthoughts/comments/bsuui0/using_the_word_obviously_unironically_is_a_very/
- (3) Manager Tools
Can someone just explain to me why some people, especially managers at meetings, overuse the word *obviously*.
<https://www.manager-tools.com/forums/saying-obviously-too-often>
- (4) Atomic Object
“*Obviously*” is a purely destructive word
<https://spin.atomicobject.com/2014/09/09/never-use-the-word-obviously/>
- (5) CV Library
Ten buzzwords not to say if you want a promotion.
1. *Obviously*
A whopping 49.8% of employers said that they were fed up with hearing employees say this annoying buzzword. That’s nearly half! While you might think that something is “obvious,” your employee may not agree. Not to mention, it is just plain rude.
<https://www.cv-library.co.uk/career-advice/work-life/10-buzzwords-not-to-say-if-you-want-a-promotion/>

As testament to the (at least perceived) ubiquity of this particular evidential adverb, it has even developed a popular clipped variant, as in (6-7), which may be indicative of its status as a stereotype (Labov, 2001:196):

- (6) The Guardian Newspaper 21 May 2015
As world Scrabble champion, I think new words are *obvs* lolz
<https://www.theguardian.com/commentisfree/2015/may/21/world-scrabble-champion-new-words-lolz-collins-official-words>
- (7) Urban Dictionary
Obvs
shortened version of the word *obviously* for the lazy people who refuse to say the whole thing
“Hey are you going to the homecoming dance tomorrow?”
“Uhm. *obvs!*”
“Cool!”
<https://www.urbandictionary.com/define.php?term=obv>

The frequent use of *obviously* in spoken data, coupled with intense social media meta-awareness of this form, points toward a potentially rapid reorganization within the set of adverbs of evidentiality. This offers the analyst an ideal opportunity to test the nature of a recently developing linguistic change and explore the possibility of it being a “mega trend” (Tagliamonte & Hudson, 1999:168) or even another “black swan” as anticipated by Tagliamonte et al. (2016:843). Corpora that allow for scrutiny of language patterns in both time and geographic space in the last one hundred years would make it possible to determine what type of change a recently evolving linguistic phenomenon might be. Does it follow the more traditional pathways of language change in a sequential spread through time and space, or is it more in line with a “simultaneous, instantaneous, parallel development, in multiple urban locations, at the same time” (Tagliamonte et al., 2016:842)? To this end, this study employs several large archives of informal, vernacular spoken language that represent the key contrasts of geographic location and community size across two large territories (the UK and Ontario, Canada) comprising individuals born from the late 1800s into the early 2000s, the cusp of the twenty-first century. The study targets a linguistic phenomenon known to be in flux across this period of history-sentential adverbs of evidentiality.

SENTENTIAL ADVERBS, AND ADVERBS OF EVIDENTIALITY

Sentential adverbs in general are said to have three characteristics: they are speaker oriented; they have sentential scope; they have clausal properties of a reduced sentence, for example, *apparently* ‘it is apparent that...’ (Swan, 1988:29). Within the broad category of sentential adverbs, a number of semantic subcategories have been proposed (e.g., González-Álvarez, 1996:219–29; Ifantidou, 2001:97–9; Saeed, 2016; Swan, 1988:30–77), including evaluative adverbs (*predictably*, *remarkably*), modal adverbs (*certainly*, *probably*), and speech act adverbs (*bluntly*, *precisely*).

While there are many different labels for sentential adverbs and highly gradient semantic nuances among them, we focus here on what we refer to as the adverbs of evidentiality, where

“evidentiality is first and foremost to do with the indication of source of information, on which basis speakers voice their claims to ‘knowledge’” (Hoye, 2008:157; see also Saeed, 2016). These adverbs are considered part of a larger set of modal adverbs: *actually*, *certainly*, *clearly*, *obviously*, *maybe*, *perhaps*, and *probably* (Payne, Huddleston, & Pullum, 2010:71) and comprise some or all of the following set: *apparently*, *clearly*, *evidently*, *obviously*, and *of course*.² These adverbs of evidentiality are known to be among the most frequently used in corpus-based studies (Swan, 1986, 1988) and have a long history in English, as detailed below.

HISTORICAL PERSPECTIVE

The emergence and subsequent development of adverbs of evidentiality have been investigated in-depth in a number of studies (e.g., Lenker, 2010; Lewis, 2002). Although debate remains about when exactly the various adverbs entered the language, the Oxford English Dictionary (OED) provides indicative dates. *Naturally*, is first cited³ in the fifteenth century (8a), with *evidently* and *clearly* appearing in the sixteenth century (8b-c). *Obviously*, which derives from the adverbial use of “in a clear perceptible manner,” is first cited with the evidential meaning of “evidently, plainly, manifestly” in the seventeenth century (8d). *Of course*, as an adverbial construction, had an earlier use of “in ordinary or due course according to the customary order, as a natural result” that is attested as early as 1542; however, it is first cited with the meaning of “naturally, as will be expected in the circumstances; for obvious reasons, obviously” a full 150 years later, with a first citation in 1823, (8e).

- (8) a. c1425 J. Lydgate Troyes Bk. (Augustus A.iv) ii. 6832 (MED) *Naturelly* no man schal desyre Of his enmye þe helthe nor welfare.
 b. 1532 T. Abell Inuicta Veritas sig. F^v Thies persons opinion & sayng..ys *evidently* false.
 c. 1569 R. Grafton Chron. II. 287 But Britaine was *clerely* excepted.
 d. 1668 M. Hale *Pref. Rolle's Abridgm.* sig. b ij Other matters more *obviously* deducible by Argumentation.
 e. 1823 J. D. Hunter Mem. Captivity 39 She made some very particular inquiries about my people, which, *of course*, I was unable to answer.

These timelines and associations establish a history and layering of form and function within this set of evidentials over a number of centuries that sets the context for a number of previous studies, both historical and contemporary.

PREVIOUS RESEARCH

The study of sentential adverbs has been undertaken from a variety of different linguistic perspectives, including semantics (e.g., Bellert, 1977), syntax (e.g., Jackendoff, 1972) and pragmatics (e.g., Hoye, 2008). Sentential adverbs are considered extremely complex due to their nuanced meanings expressing distinctions of modality, evaluation, and illocutionary force, making them what some scholars refer to as “the most nebulous and puzzling” lexical category in English, and one that “does not fit the definitions for other word classes” (Quirk, Greenbaum, Leech, & Svartvik, 1985:438). Trask (1993:251) further described sentential adverbs as “a lexical item typically having the approximate distribution, and often the form, of an adverb, but behaving not as a modifier of the verb or VP but as an operator upon the entire proposition.” In Jackendoff’s

(1972:76) framework, sentential adverbs are categorized as “speaker-oriented.” As such, they are generally treated not as truth conditional indicators but instead within the domain of the speech act, making them semantically external to the proposition. In Traugott’s (1989) framework, they are integrally involved in ongoing processes of subjectification in which there is a development toward the encoding of “speaker informativeness about his or her attitude ... [and a] strengthening of focus on knowledge, belief and the speaker’s attitude toward the proposition” (Traugott, 1989:49).

Some studies focus on the trajectory of these adverbs in historical written texts (e.g., Lenker, 2010; Swan, 1986, 1988). Others are based on their use in different written registers, such as scientific writing (e.g., Barbaresi, 1987). Many studies tend to concentrate on one adverb or the other, for example, *of course* (Holmes, 1988; Lewis, 2002; Simon-Vandenberg & Aijmer, 2007; Wichmann, Simon-Vandenberg, & Aijmer, 2010), *surely* (Downing, 2001), *obviously* versus *clearly* (Kang, 2017). A few studies target multiple adverbs of the same class, for example Suzuki (2016). Simon-Vandenberg and Aijmer (2007) offered a rare comparison of over twenty adverbs of “certainty” in both spoken and written data.

SENTENTIAL ADVERBS AND EVIDENTIALS IN PARTICULAR

The broad category of sentential adverbs is known to have undergone a dramatic development as a type of adverb across the history of English. For example, working with texts from Old English, Middle English, Modern English (1500-1900), and Present Day English (1900-2000), Swan (1986, 1988) shows that “truth intensifiers” *truly*, *indeed*, “evaluative adverbs” *wonderfully*, *horribly*, and “speech act” adverbs, *frankly*, *briefly*, steadily increased from Old English to Present Day English. Of these, the evidentials, what she refers to as “truth intensifiers”—those used by speakers “to convey that he or she has evidence, often perception, or to draw conclusions from evidence” (Mitchell, 1976; Swan, 1988:3)—are the most frequent class, rising from 292 tokens in OE to 1336 in PDE (in texts of similar length) (Swan, 1988: Table 2).⁴

A great deal of attention has been directed to the position of the adverb relative to the clause structure as a means of determining function. For example, Aijmer (2007) claimed that evidential adverbs “can be inserted in practically any position in the sentence”; however, when they become specialized to particular syntactic slots, they may become conventionalized to specific pragmatic functions. More specifically, Aijmer (2007:65) suggested that clause final *obviously* is used for “affective meaning and solidarity” (e.g., I’ll help you with that, *obviously*) whereas initial position functioned as “imposition and emphasis” (e.g., *Obviously*, we don’t want to spend too much money).

Given the striking increase in use of evidential adverbs as a type in the history of English, and the possibility of using linguistic criteria to distinguish form and function, our goal in the present study is to contribute to the understanding of this “most nebulous and puzzling” lexical category (Quirk et al., 1985:438) and to add new information to the question of types of linguistic change more generally.

DATA AND METHOD

The data come from a unique compendium of vernacular speech data from research projects in the United Kingdom and Canada over the past thirty years.⁵ The first set of corpora was collected between 1997 and 2013 across the UK (Tagliamonte, 1996-1998 et seq.; Smith, 2000 et seq.). The

UK materials extend from Devon in the southwest to Shetland in the far north. The second set of corpora was collected in Canada between 2001 and 2017 (Tagliamonte, 2003-2006 et seq.). The Canadian materials extend from Toronto in the south to Kapuskasing in the north. Across both countries, the data include both rural and urban communities, from small villages to larger metropolises. Maps indicating the different locations of the communities are shown in Figure 2. All of these materials were collected using standard sociolinguistic fieldwork methods and techniques using the sociolinguistic interview described extensively in the literature (e.g., Labov, 1970). In addition to the corpora collected by the authors, we also include two other large corpora. Data from urban London, England come from a series of projects by Cheshire, Kerswill, and associates (Cheshire, Fox, Kerswill, Khan, & Torgersen, 2007-2010; Kerswill & Cheshire, 2004-2007), and data from FRED come from early dialectological surveys or folklore projects in the UK (Anderwald & Wagner, 2005). In terms of corpus size, the Canadian materials comprise approximately fourteen million words, while all the UK materials combined total approximately nine million. To our knowledge, the totality of these materials in a single study represents one of the largest bodies of spoken vernacular English to be subjected to variationist analysis to date.

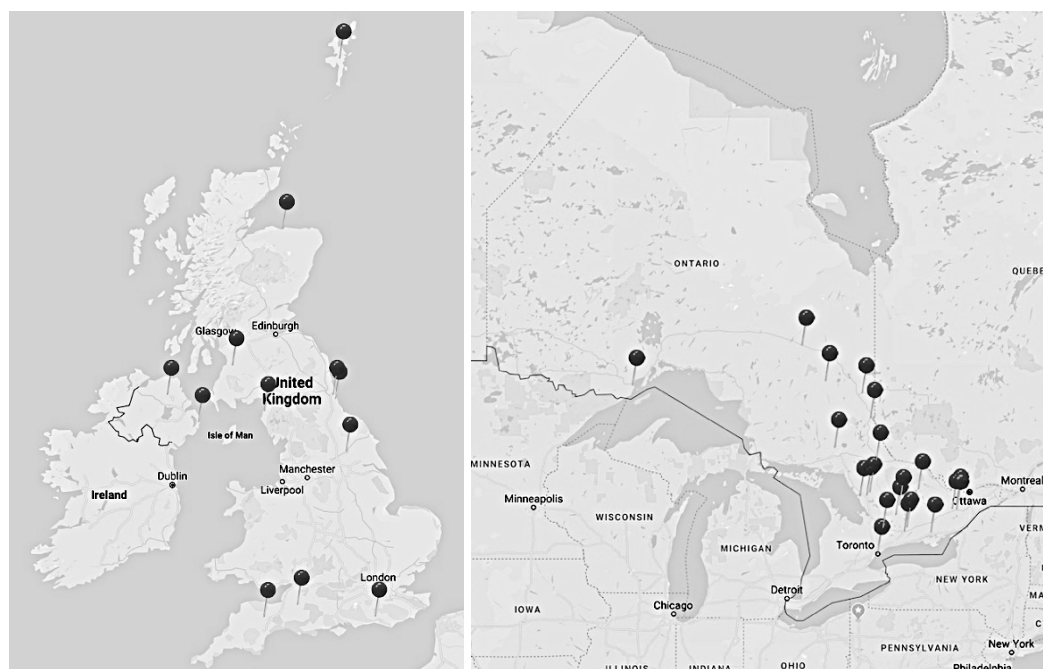


FIGURE 2. Locations of the UK and Canadian data.

Circumscribing the variable context

The first challenge for this study was to circumscribe the set of adverbs to be included in the study. We considered the evidence from the OED as well as definitions from earlier research on evidentiality in order to identify the relevant forms. Adverbs of evidentiality are often quite broadly defined and can be “vague and underspecified” and “pragmatically polysemous” (Simon-Vandenberg & Aijmer, 2004:28). Furthermore, the meaning of an adverb may differ depending on their syntactic slot in the clause (Aijmer, 2007; Lewis, 2000). This has implications for the present analysis, given that functional equivalence is a key tenet of the variationist paradigm. We

thus relied on the concept of “weak complementarity” (Sankoff & Thibault, 1981) in justifying our overall method. According to Sankoff and Thibault (1981), the relevant criteria are: (1) that the variants “must serve one or more generally similar discourse functions (Sankoff & Thibault, 1981:213); and (2) that “one form appears to be replacing the other, either in time or along some socioeconomic or demographic dimensions in the speech community” (Sankoff & Thibault, 1981:215). In our data, the adverbs used for evidential meaning are: *obviously*, *of course* (and the variants of *of course* in spoken data),⁶ *clearly*, *naturally*, and *evidently*, as shown in (1).⁷ Manner adverbials, as in (9), were excluded.

- (9) a. Each year we’d put a new building up and it was all *naturally* ventilated. (UK, M, b. 1967)
 b. I can mind on that pretty *clearly*. (UK, M, b. 1937)

In most cases, it was straightforward to distinguish between evidential and manner uses. However, Simon-Vandenberg and Aijmer (2007:165) noted a number of ambiguous cases in their data, including (10):

- (10) a. Mercedes have always been at the forefront of luxury car design and this car is *clearly* aimed at keeping them there. (Simon-Vandenberg & Aijmer, 2007:165)

Such an example could be interpreted as “in a very clear way,” that is, manner adverbial or “it is clear that,” that is, evidential (Simon-Vandenberg & Aijmer, 2007). Such ambiguity undoubtedly arises from the development of evidentials from manner adverbs into sentential adverbs, with transition zones resulting in ambiguity (e.g., Buchstaller & Traugott, 2006; Traugott, 2014). Our data also contained examples that may be ambiguous, as in (11):

- (11) a. It was *obviously* a male-based class. (UK, M, born 1995)
 b. If you’re true to yourself then you’ll *naturally* end up meeting people that you would like. (CAN, F, born 1984)

In 11b, for example, *naturally* could be interpreted as “in the natural course of events,” that is, a manner adverbial, or “it is clear that,” that is, evidential. In such cases, we erred on the side of caution and removed ambiguous examples from the dataset. After these exclusions, we were left with 8,089 tokens in the total data set, 3,726 in Canada and 4,363 in the UK.

To study the possibility of linguistic change in progress in these synchronic data, we use two proxies for time depth. On the assumption that language change progresses across space according to the size and location of communities (e.g., Trudgill’s [1974a] Gravity Model), we make use of urban and more outlying locations in the two countries. For example, in the UK, the small villages and towns in peripheral locations can be expected to lag behind cities such as London. Similarly, in Canada, small villages and towns in peripheral locations can be expected to lag behind Toronto, and this has already been demonstrated in recent work (e.g., Jankowski & Tagliamonte, 2019). On the assumption that language change can be studied among people of different ages (i.e., apparent time [Bailey, Tillery, & Sand, 1991]), we will use the individuals of different generations in the communities whose dates of birth span over one hundred years (1890s to 1990s). Finally, we will employ variationist sociolinguistics methods (Labov, 1963; Weinreich, Labov, & Herzog, 1968 et

seq.) to examine complex patterns of language use. In this case, we will exploit both the frequency of forms as well as the underlying social and linguistic constraints on their competition. This will expose not only the social and geographic underpinnings of the variation among the adverb cohort but also enable us to infer the type of linguistic change in progress. Layering—the co-existence of multiple forms “within a broad functional domain” (Hopper, 1991:22)—between the main variants will be the foundation of our analysis. We begin with systematic study of the data, using comparison of marginals and cross-tabulation to arrive at a detailed understanding of the patterns inherent in the data set. We employ conditional inference trees (e.g., Strobl, Malley, & Tutz, 2009) to uncover how the most important predictors work together (see Tagliamonte & Baayen, 2012). Finally, we put to work the tools of statistical modeling, using a series of mixed effects generalized linear models to evaluate the significance of patterns and interactions across competing contextual constraints (e.g., Baayen, 2008). Interpretation of the results of the statistical models compared across communities and across generations (see, e.g., Tagliamonte, 2002) will be used to help us situate the change in time and space.

RESULTS

The question of rapid acceleration of *obviously* can only be determined by scrutinizing the relative frequencies of the lexical adverbs in the set.⁸ Table 1 shows the proportion of each of the main evidential adverbs across the two countries.

TABLE 1. Overall distribution of evidential adverbs in Canada and the UK (Total n = 12072)

Country	<i>clearly</i>	<i>evidently</i>	<i>naturally</i>	<i>obviously</i>	<i>of course</i>
CANADA	0.43%	0.28%	1.16%	14.8%	83.4%
UK	0.04%	0.20%	1.17%	19.3%	79.3%
Total n	25	28	141	2099	9779

Table 1 shows the contemporary distribution of layering within the adverbs of evidentiality. The overarching pattern is parallel in both locales: *of course* makes up the lion’s share of the data in both varieties (84% in Canada and 79% in the UK). *Obviously* is the next most frequent form (15% in Canada and 19% in the UK). Use of *clearly*, *evidently*, and *naturally* is very sparse. However, these data comprise speakers of very different ages and from very different communities within the countries, thus it is important to investigate the use of adverbs of evidentiality along these parameters.

Through the decades

The next step is to investigate the possibility of generational change, using the individual’s date of birth as a proxy, providing a view from apparent time. Figures 3 and 4 provide a striking perspective of the frequency of the main forms by birthdate of the individuals in each country, Canada and the UK.

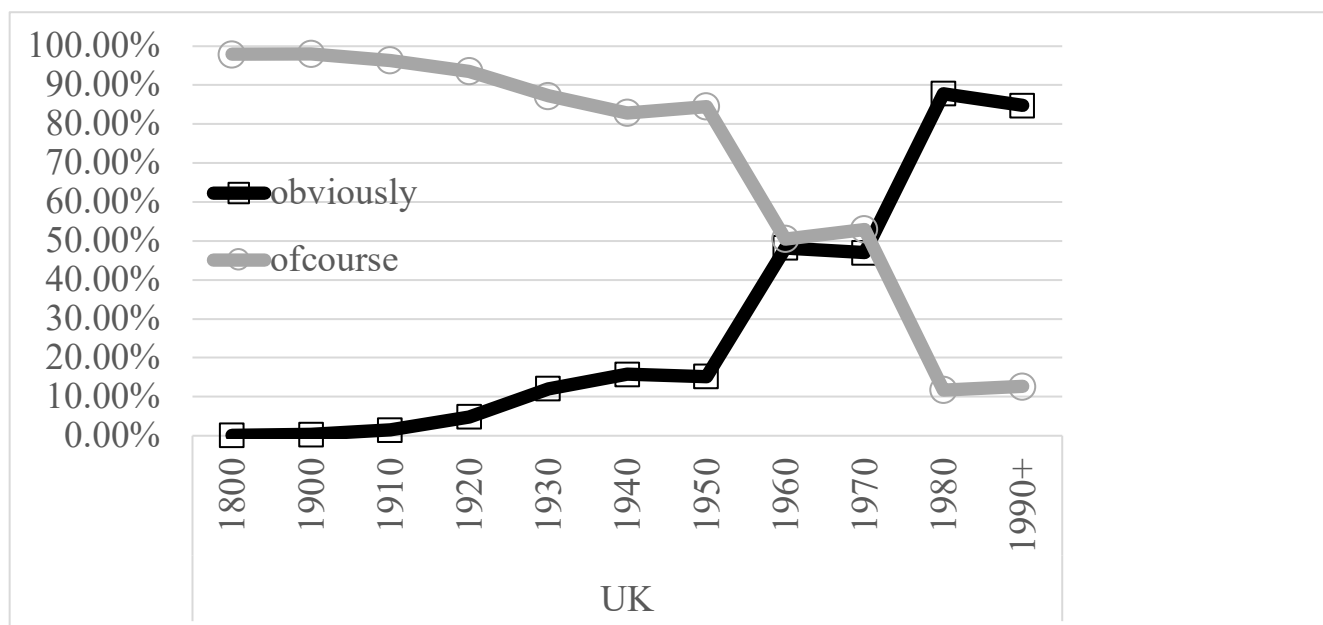


FIGURE 3. Overall distribution of evidential adverbs by date of birth in the UK.

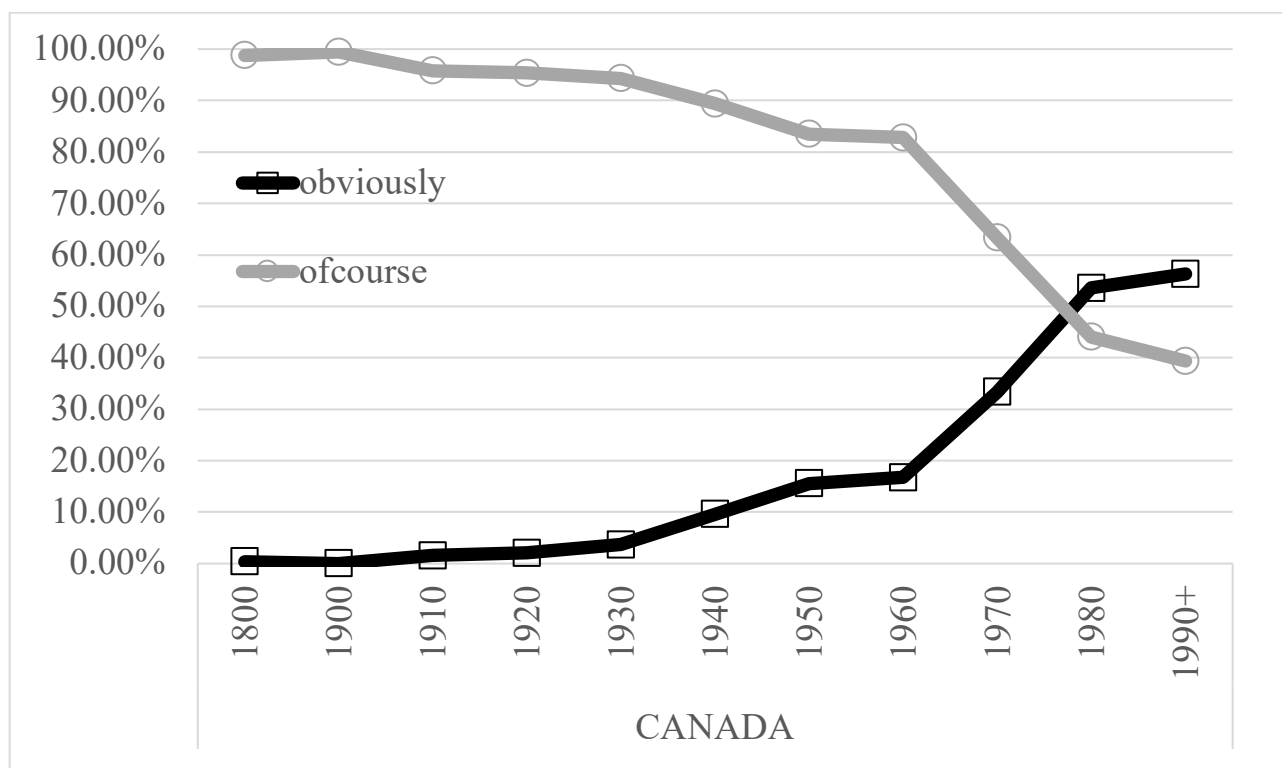


FIGURE 4. Overall distribution of evidential adverbs by date of birth in Canada.

The figures show a distinct trajectory of change in the use of these forms. *Naturally*, *clearly*, and *evidently* are very infrequent, existing at very low rates across the board. The competition in

adverbs of evidentiality is centered on *obviously* and *of course*. While *of course* declines, *obviously* increases incrementally and precipitately through the decades with *obviously* the clear “winner” among individuals born after the 1980s.⁹ In both the UK and Canada, the use of *obviously* begins to accelerate in the 1920s, despite the fact that the OED’s earliest citation of *obviously* is about three hundred years earlier, in the mid-1600s (examples 8d-e). Note, however, that, in the UK, the changeover from *of course* to *obviously* is virtually categorical, while, in Canada, *of course* remains a competitor. In other words, *obviously* accelerates more slowly in Canada. Nevertheless, the trajectory in both countries has visible stages of development: an early phrase up to about 1930, a middle phase of acceleration up to about 1960, then after 1980, and a final phase after 1990.

We can now look in more detail at the progress of this change through the extensive community-based samples within each of the two countries. Figure 5 shows the rise of *obviously* when the data are divided by the different communities in each region. The frequency of *obviously* as opposed to all other evidential adverbs (mostly *of course* variants) is represented by ‘obviously’ on the Y axis and the date of birth of the individuals on the X axis, “dob.”¹⁰ Note that we have combined data in geographically contiguous areas where data were sparse: “small north” refers to a collection of rural communities in Northern England, and “small south” refers to communities in more southerly areas of England. “SCOTLAND” combines a number of smaller datasets in that country, with larger datasets (BUCKIE, SHETLAND) kept separate. In the Canadian data, “SMALL NORTH” and “SMALL SOUTH” refer to small communities in northern and southern Ontario. The two peaks in the right-hand figure are the error bars for certain communities where there is scant data in the corresponding decade.

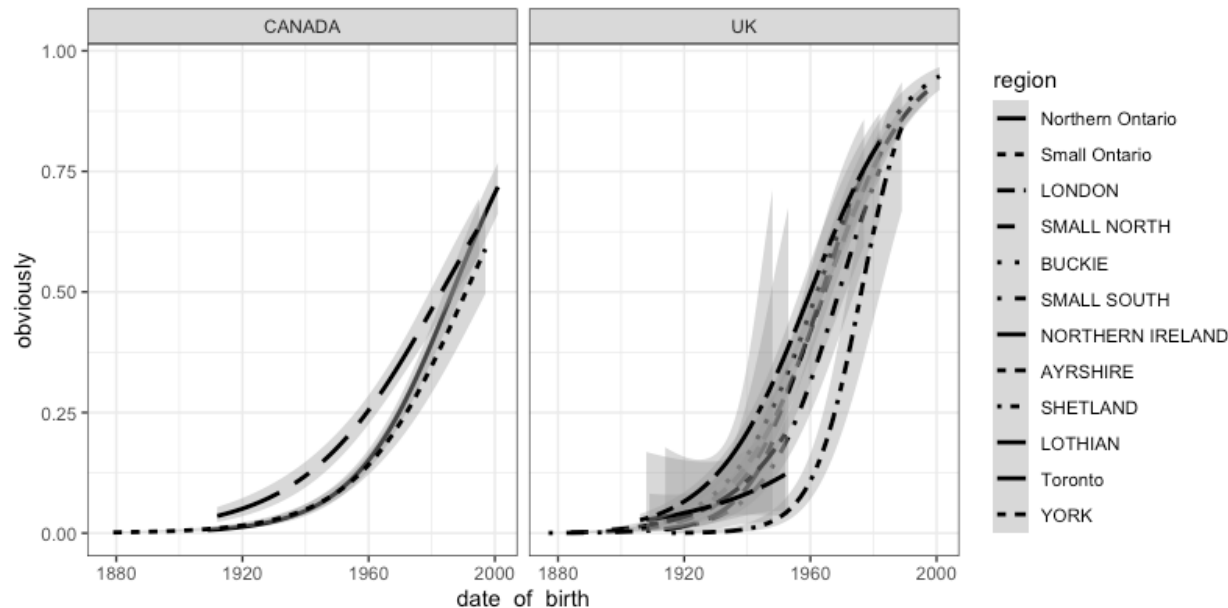


FIGURE 5. Distribution of evidential adverbs by date of birth in the Canada and the UK.

Figure 5 exposes the rapid, but highly consistent, pattern of rocketing use of *obviously* across both countries and across different regions and types of communities within each nation. What we might expect to see, if *obviously* were diffusing through space, is that the large urban cities in Canada and the UK—Toronto and London—would lead in the change, with other areas lagging behind.

Instead, Figure 5 shows that these communities move in parallel in their rapid uptake of *obviously*. These patterns suggest that traditional models of language change via diffusion are not fully explanatory for this linguistic change.

Sex

Figure 6 shows the rise of *obviously* by gender in Canada and UK, here represented as a contrast between perceived gender, male (“M”) and female (“F”). The proportion of *obviously* tokens is shown as a binary contrast between *obviously* and all other forms.

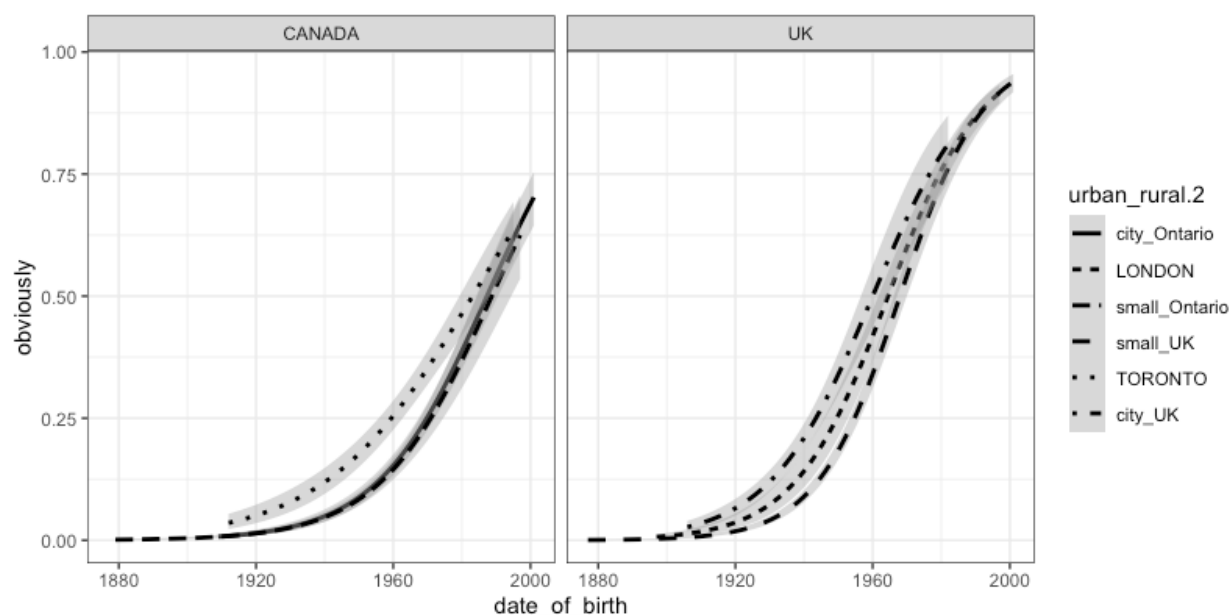


FIGURE 6: *Obviously* across gender in Canada and the UK.

In contrast to most studies of linguistic change in progress, which show a strong lead by women—whether change from above or change from below—in both Canada and the UK, males and females rise in tandem in use of *obviously* with neither group in the lead until a very slight advantage by women in the last two decades of the twentieth century in Canada.

Internal constraints

A common predictor in the advancement of linguistic change in progress, particularly with features in the discourse pragmatic domain, is the position of the form in the clause structure. Indeed, it has been suggested that “everything that happens to the meaning of a gram happens because of the contexts in which it is used” (Bybee, Perkins, & Pagliuca, 1994:297). Accordingly, many corpus-based studies have used this contrast in their analyses (D’Arcy, 2017; Denis, 2015; Denis & Tagliamonte, 2016; Traugott & Dasher, 2002). In order to test the effect of syntactic structure in the progress of change, we distinguish four positions for the evidential adverbs: clause initial (12a), clause final (12b), clause internal (12c) and what we call “stand alones” (12d).¹¹

- (12) a. And ***obviously***, they knew something about medicine, so they were both chosen to go into the medical field.

- b. Oh yes, he picked up, yeah, all the Devon words, *of course*
- c. The other excitement, *of course*, was the spies that were picked
- d. Well, yes. *Obviously*.

Figure 7 partitions the data into these four categories in Canada and the UK: final (“F”), initial (“I”), middle (“M”), and standalone (“S”). Once again, the proportion of *obviously* tokens is shown as a binary contrast between *obviously* and all other forms and the date of birth of the individuals, “date_of_birth,” is shown on the X axis.

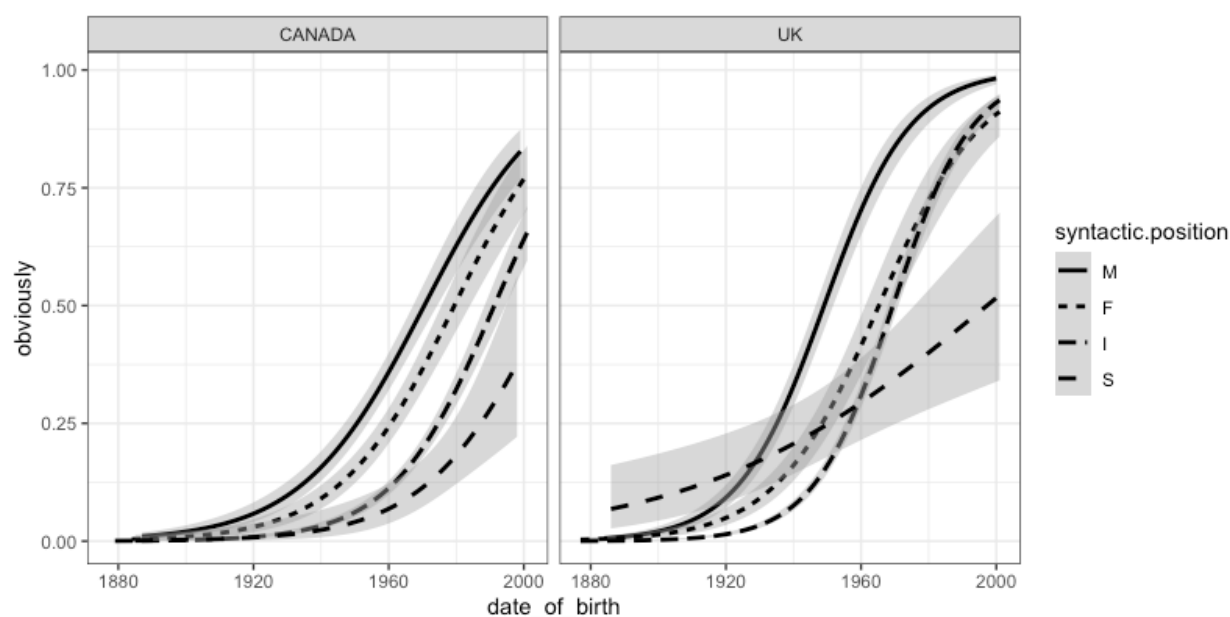


FIGURE 7: *Obviously* by syntactic position in Canada and the UK.

Figure 7 reveals parallel trajectories for the use of *obviously* across the four syntactic positions where there is sufficient data to tell. The evidential adverb *obviously* is most frequent in medial position, then final position, then initial position in both regions for most of its trajectory.¹² Further, this pattern stays constant through most of the S-curve trajectory of the change. Only the standalone cases in the UK look different. However, these contexts are very infrequent in the data ($n = 139$), with the error bars indicating that the trajectory is not reliable. The main difference between Canada and the UK is that *obviously* has fully taken over the system in the UK, and all the contexts have converged by the end of the twentieth century.

Statistical modeling

The next step is to seek validation of a systematic change in progress within the linguistic system, using statistical modeling. The patterns visible in the foregoing factor by factor analyses must be assessed for statistical significance when all the relevant factors are considered simultaneously and assessed over and above the effect of the individuals in the sample. The analysis in Table 2a was based on 6,768 observations of the dependent variable from 649 individuals. The analysis in Table 2b was based on 4,851 observations of the dependent variable from 698 individuals. Each of the independent predictors is shown with the number of observations per cell and the frequency of

obviously out of the total number of observations. The mixed effects model was performed using the statistical package R using the *lme4* package (Baayen, 2008; Team, 2007) and the “bobyqa” optimizer with individual included as a random effect. The reference level is set so that the model predicts the incoming favored variant, *obviously*.

Even with the large number of individuals and observations in the sample, this was not sufficient to model date of birth as continuous, even when the data from both countries was run together. Any model including date of birth as continuous failed to converge and produced very large eigenvalues. To obviate this issue, we used conditional inference tree technique using the party package in R (R Core Team 2007) to determine relevant junctures in the date of birth continuum. Despite the slightly different points of acceleration in the two countries (see Figures 2 and 3), the main juncture points in the trajectory of change are comparable except in the later stages of the change as *obviously* picks up speed. Nevertheless, due to these differences between countries, we model them separately to expose the influence of the main urban center and syntactic position in each local. No model led to a statistically significant effect of gender, so it was removed from the final model. Standalone contexts were removed due to small numbers.

TABLE 2A. *Mixed effects model of the adverbs of evidentiality in Canada*

	Estimate	Error	z value	Pr(> z)	%	n/cell
(Intercept)	-4.7286	0.392	-12.062	< 2e-16 ***		
OUTLYING VS MAJOR URBAN CENTER						
Outlying					11.5	3863
Toronto	0.9478	0.2976	3.185	0.00145**	28.3	988
DATE OF BIRTH						
≤1930					1.4	1655
1931-1960	2.01	0.3923	5.124	2.99e-07***	10.1	1984
1961-1980	3.9814	0.4535	8.779	<2e-16***	26.4	601
1980-1990	5.4699	0.4898	11.168	<2e-16***	58.4	419
1990-2001	5.737	0.5552	10.333	<2e-16***	52.6	192
SYNTACTIC POSITION						
Medial					30.4	840
Final	-0.793	0.1901	-4.171	3.03e-05***	21.4	804
Initial	-1.8202	0.1594	-11.419	<2e-16***	9.3	3207

Significance. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

TABLE 2B. *Mixed effects model of the adverbs of evidentiality in the UK*

	Estimate	Error	z value	Pr(> z)	%	n/cell
(Intercept)	-5.6133	0.5067	-11.077	< 2e-16 ***		
OUTLYING VS MAJOR URBAN CENTER						
Outlying					12.5	5443
London	-0.2936	0.6997	-0.424	0.672	47.0	1325
DATE OF BIRTH						
≤1930					2.3	4085
1931-1960	3.4570	0.4943	6.993	2.69e-12 ***	14.4	1402
1961-1980	7.0781	0.7682	9.213	< 2e-16 ***	56.4	406
1980-1990	11.9094	1.1305	10.534	< 2e-16 ***	88.8	599
1990-2001	10.6490	1.1008	9.674	< 23-16 ***	87.7	276
SYNTACTIC POSITION						
Medial					40.5	1009
Final	-1.0374	0.2482	-4.180	2.91e-05 ***	22.1	700
Initial	-2.0103	0.1882	-10.681	< 2e-16 ***	14.6	5059

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Tables 2a and 2b show that date of birth and syntactic position are significant in both countries and with a parallel incrementation; however, the difference between the main urban center of each region (London and Toronto) compared to the outlying areas is only significant in Ontario, Canada. The extreme acceleration of this change in the last decades of the twentieth century in the UK trumps regional differences. In contrast, in Ontario, the change is moving comparatively slower, and outlying regions lag behind. This geographic pattern is consistent with other current changes in progress in the Canadian context (Franco & Tagliamonte, 2020; submitted; Jankowski & Tagliamonte, 2019; Tagliamonte & Jankowski, 2018).

Testing the difference between Canada and the UK with respect to change among the cohort of adverbs used for evidentiality reveals that *obviously* began to increase in use at approximately the same point in time in both varieties—the early twentieth century (see Figures 3 and 4) and has been accelerating ever since. In the UK, *obviously* has risen to the point of having taken over the system, and the differences among syntactic contexts has leveled. In Canada, the visible stepwise progress of the constant rate of change is lagging slightly behind (see Figure 7). The greater use of *obviously* in the UK and a faster acceleration may be due to any number of reasons; however, the internal patterns of use tap into system level mechanisms of language organization. What implications do these results have for understanding each of the foundational hypotheses about the progression of language variation and change reviewed earlier? Further, what do they suggest for continuing to assume that the Uniformitarian Principle holds in the twenty-first century, just as it always has done, and, if not, what are the implications for linguistic change in the future?

DISCUSSION

Over the past sixty years, quantitative sociolinguistic research has sought to understand the processes underlying language change in synchronic data. As noted in the introduction, a number of key principles have emerged from this research that are shared across most, if not all, studies of language change. Specifically, diffusion of innovating forms follows a *sequential* pathway of change, moving through time and space in an orderly S-shaped curve. More recent work suggests that so-called “mega-trends,” that is, those innovations that are widespread throughout the English-speaking world, may defy those well-established principles in that some changes are starting to happen *simultaneously* (Tagliamonte et al., 2016). This, in turn, may have a fundamental influence on how language change proceeds. Our analysis of the rise of *obviously* as an adverb of evidentiality across one hundred years in recent history and two major varieties of English allowed us to assess that possibility.

First, we have documented a rapid system change taking place in this system. While *apparently*, *evidently*, *naturally*, and *clearly* were stable over the twentieth century, the focus of change in the system involves competition between *of course* and *obviously*, with the latter usurping the former in speech data. Examination of the rise of *obviously* across the UK and Canada (Figures 3 and 4) revealed that, in two these countries, *obviously* took hold in the system at approximately the same time. This suggests near simultaneous innovation in two widely separated geographic areas, a change at odds with the classic tenets of diffusion, where innovations move from place to place in an ordered succession. We also note that *obviously* had entered the grammar around the seventeenth century, making the simultaneous take-up of this form some four hundred years later even more intriguing. Once *obviously* begins to escalate, it does so very rapidly: within the space of fifty years, it moves from extremely marginal use to the majority variant in both countries. Our analysis further shows that this rapid rate of change continues to (near) completion in the UK, where *of course* in highly vernacular spoken data is virtually obsolete. Canada looks set to continue the same trajectory, but at a slightly slower pace (Figures 3 and 4, 5-7).

Examination of the patterned use of *obviously* across geographic space within each country provides further details of the progress of this change. Figure 5 demonstrated that the S-shaped curve was replicated across all communities within the UK and Canada, and, perhaps more surprisingly, each community, regardless of size or geographic location, moved in lockstep in the rise of *obviously*. These patterns of use in the descriptive statistics were confirmed in the mixed effects model for the UK (Table 2b) where urban versus outlying was not selected as significant. However, for Canada (Table 2a), the urban/outlying contrast was selected as significant, with *obviously* in the large urban conurbation of Toronto in advance. These results suggest that this change initiates near simultaneously in both the UK and Canada, but with slightly different trajectories across geographic space once the change is in progress. In Canada, diffusion of this form seems to be following more traditional pathways of sequential spread, as per Trudgill’s Gravity Model. In contrast, we find no apparent incremental diffusion within regions in the UK: *obviously* moves concurrently across the landscape in each region. Differences in “sociolinguistic typology” (Trudgill, 2011:211), including demography and social network structure, may account for these results.

Analysis of the remaining social and contextual factors showed strikingly parallel constraints on use of this rapidly expanding innovation. In each case, the classic S-shaped curve is visible in the apparent time continuum, confirming that the course of this development follows in the same trajectory as many other linguistic changes in progress. The S-shape curve is also evident by

gender, as demonstrated in Figure 6. With regard to Principle 3, that women will lead in the adoption of incoming forms, the social embedding of this change is contrary to expectation: there are no gender leaders. When the data is partitioned by male/female, both groups participate equally.

When we examine linguistic constraints in the progress of change, the mixed effects model showed that, across both countries, syntactic position was significant. Crucially, Figure 7 shows that the rise of *obviously* moves in tandem across a number of different syntactic slots, both within and between the UK and Canada, lending further support to the fact that *obviously* advances in parallel across all linguistic contexts. This pattern is indicative of the constant rate effect (Kroch, 1989), which suggests a single underlying change in the linguistic system. Perhaps more importantly, these results are in line with other rapid linguistic developments that show parallel internal linguistic constraints (Tagliamonte et al., 2016:841). In addition, we note that, in the UK, where the trajectory of change is more advanced than in Canada, the different syntactic slots merge at the end of the S-shaped curve. This suggests that, regardless of potential meaning differences according to syntactic slot (e.g., Aijmer, 2007), the innovating form infiltrates all contexts as it nears completion.

In sum, the adverbs of evidentiality exhibit all the hallmarks of a systematic change in progress, which embody both traditional models of language change and a novel organizational design: (1) an S-curve developmental trajectory; and (2) a constant rate of contextual constraints; but (3) no binary gender effect; and (4) near simultaneous advancement. The broad geographic and generational perspective from individuals born from the late nineteenth and across the twentieth century permits affirmation of key attributes that are beginning to emerge from the study of accelerating, innovating features in the late twentieth century. They are essentially “off the shelf” changes (Milroy, 2007): easily borrowed and receptive to global trends, but exhibiting regular and constant patterns as the change progresses. Thus, with respect to the Uniformitarian Principle, in some respects the “present is not like the past at all” (Trudgill 2021:211). Whether this new combination of characteristics for a linguistic change in progress is due to the nature of variation within this adverb cohort or is the result of recent and ongoing sociocultural change, and that we have actually tapped a new linguistic black swan (Tagliamonte et al., 2016), presents an exciting avenue for future research. Emerging models of grammaticalization that offer new methods for documenting generational shifts at key stages of linguistic change (Petré & van de Velde, 2018) will be useful in determining whether these types of changes follow the same episodic trajectory. One thing is sure, as we continue to collect representative vernacular speech into the next century, Labov’s (1994:11) trope that historical linguistics is the “art of making the best of bad data” and the restriction of synchronic studies to the late nineteenth and twentieth century, will become a thing of the past.

NOTES

1. <https://books.google.com/ngrams> Accessed December 7, 2019.
2. Although others are sometimes included, depending on the nature of the data, for example, *intuitively* and *experimentally* for scientific writing (Almeida, 2012).
3. Note that the first *citation* of a word is not necessarily its first *use* (Hope, 2016). However, taken together, the dates of the OED citations along with a search of the actual quotations provide a timeline of the development of each evidential adverb in the historical record.
4. One of our reviewers notes that these figures may not arise from an increase in use of sentential adverbs across time but instead from a change in use of the lexical items used to perform these functions. We assume that Swan has controlled for this in her analysis as she included the equivalent lexical items used in the different time periods.
5. While the bulk of the materials come from data collected and compiled by the two authors, we also owe a great debt to Jenny Cheshire and Paul Kerswill for access to their London corpora and to the compilers of the FRED Corpus: <http://www2.anglistik.uni-freiburg.de/institut/lkortmann/FRED/>
6. We searched all the datasets for variants of all the adverbs, for example, *of course* can occur as *o'course*, *'course*, or *course* in the transcription files. Further investigation revealed that some transcription protocols distinguished reduced variants of *of course* while others did not. However, this does not affect our study, since our analysis does not focus on full versus reduced forms.
7. Researchers are generally agreed on the inclusion of *obviously*, *clearly*, *naturally*, and *evidently* in this set of evidentials. The inclusion of *of course*, however, is subject to more debate, and in particular whether it is more modal or evidential in function (e.g., Quirk et al., 1985:9.5). While it may have uncertain status in written data, in spoken data “there is actually a great deal of agreement” among scholars (Simon-Vandenberg & Aijmer, 2002:20) as to its core meaning in discourse of a “speaker’s certainty based on reason” (Simon-Vandenberg, 1992:214).
8. We note that evidential adverbs occur at 5.88/1000 words in Canada and 8.47/1000 words in the UK data, suggesting a greater propensity to use evidential adverbs in the UK. While the reasons why are outside the scope of the present study, this is an excellent question for future research.
9. Individuals in the FRED materials were coded where the metadata permitted for date of birth, and, if this information was not available, were treated as having a date of birth of 1910, which is the median date of birth of the oldest individuals in the sample <http://www2.anglistik.uni-freiburg.de/institut/lkortmann/FRED/coverage.htm#informants> Accessed 2-17-20 7:16. This does not affect the timing of the crossover patterns, although use of *obviously* may have existed earlier than the 1910 cut-off date we use here.
10. One reviewer queried why we ran *obviously* against all other evidentials rather than just *of course*. We wanted to model the entire set of evidentials in these data, but note that the small *n*’s for *naturally*, *clearly*, and *evidently* mean that inclusion or exclusion does not change the results.
11. As noted earlier, a number of studies note that adverb position may have an impact on its pragmatic function (Aijmer, 2007; Lewis, 2000). Such nuances are beyond the scope of the present study where the focus is on change in form across time.
12. This is in contrast to what is reported for *of course*, which occurs most frequently in initial position (Simon-Vandenberg & Aijmer, 2007; Wichmann et al., 2010).

REFERENCES

- Aijmer, K. (2007). Modal adverbs in interaction—*obviously* and *definitely* in adolescent speech. In Nevalainen, T., Taavitsainen, I., Pahta, P. & Korhonen, M. (Eds.), *The dynamics of linguistic variation: Corpus evidence on English*. Amsterdam and Philadelphia: John Benjamins. 61–83.
- Almeida, F. A. (2012). Sentential evidential adverbs and authorial stance in a corpus of English computing articles. *Volumen Monográfico*: 15–31.
- Anderwald, L. & Wagner, S. (2005). FRED – The Freiburg English Dialect corpus. In Beal, J., Corrigan, K. & Moisl, H. (Eds.), *Papers from the 20th Sociolinguistics Symposium at Newcastle*. London: Macmillan.
- Baayen, H. (2008). *Analyzing linguistic data: A practical introduction to statistics*. Cambridge: Cambridge University Press.
- Bailey, G., Wikle, T., Tillery, J. & Sand, L. (1991). The apparent time construct. *Language Variation and Change* 3(3): 241–64.
- . (1993). Some patterns of linguistic diffusion. *Language Variation and Change* 5(3): 359–90.
- Barbaresi, M. (1987). “Obviously” and “certainly”: Two different functions in argumentative discourse. *Folia Linguistica* 21(1): 3–24.
- Bellert, I. (1977). On Semantic and Distributional Properties of Sentential Adverbs. *Linguistic Inquiry* 8(2): 337–51.
- Bloomfield, L. (1933). *Language history*. New York: Holt, Rinehart, and Winston.
- Blythe, R. A. & Croft, W. (2012). S-curves and the mechanisms of propagation in language change. *Language* 88(2): 269–304.
- Boberg, C. (2000). Geolinguistic diffusion and the U.S.-Canada border. *Language Variation and Change* 12: 1–24.
- Britain, D. (2002). Space and spatial diffusion. In Chambers, J. K., Trudgill, P. & Schilling-Estes, N. (Eds.), *Handbook of Language Variation and Change*. Malden and Oxford: Blackwell Publishers. 603–37.
- . (2004). Geolinguistics and linguistic diffusion. In Ammon, U., Dittmar, N., Mattheier, K. & Trudgill, P. (Eds.), *Sociolinguistics: International Handbook of the Science of Language and Society*. Berlin: Mouton de Gruyter. 34–48.
- Buchstaller, I. & Traugott, E. C. (2006). The lady was demonyak: Historical aspects of adverb ALL. *English Language and Linguistics* 10(2): 345–70.
- Bybee, J. L., Perkins, R. D. & Pagliuca, W. (1994). *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.
- Bynon, T. (1977). *Historical linguistics*. Cambridge: Cambridge University Press.
- Chambers, J. K. (1995). *Sociolinguistic theory: Linguistic variation and its social significance*. Oxford: Blackwell Publishers.
- . (2002). Patterns of variation including change. In Chambers, J. K., Trudgill, P. & Schilling-Estes, N. (Eds.), *The handbook of language variation and change*. Malden and Oxford: Blackwell Publishers. 349–72.
- Cheshire, J., Fox, S., Kerswill, P., Khan, A. & Torgersen, E. (2007-2010). Multicultural London English: the emergence, acquisition and diffusion of a new variety. Economic and Social Science Research Council (ESRC) Grant.
- D’Arcy, A. (2017). *Discourse-Pragmatic Variation in Context: 800 years of like*. Amsterdam and New York: John Benjamins.

- Denis, D. (2015). *The development of pragmatic markers in Canadian English*. PhD Dissertation. University of Toronto.
- Denis, D. & Tagliamonte, S. A. (2016). Innovation, *right?* Change, *you know*: Utterance Final Tags in Canadian English. In Pichler, H. (Ed.), *Discourse-pragmatic variation and change in English: New methods and insights*. Cambridge: Cambridge University Press. 86–112.
- Denison, D. (2003). Log(istic) and simplistic S-curves. In Hickey, R. (Ed.), *Motives for language change*. Cambridge: Cambridge University Press. 54–70.
- Downing, A. (2001). ‘Surely, you knew!’ *Surely* as a marker of evidentiality and stance. *Functions of language* 8(2): 253–85.
- Franco, K. & Tagliamonte, S. A. (2020). New -way(s) with -ward(s): Lexicalization, splitting and sociolinguistic patterns. *Language Variation and Change* Published online by Cambridge University Press: 27 July 2020: 1–23.
- . (submitted). Interesting fellow or tough old bird? 3rd person male referents in Ontario. *American Speech*.
- González-Álvarez, D. (1996). Epistemic disjuncts in Early Modern English. *International Journal of Corpus Linguistics* 1(2): 219–56.
- Holmes, J. (1988). *Of course*: A pragmatic particle in New Zealand women's and men's speech. *Australian Journal of Linguistics* 8(1): 49–74.
- Hope, J. (2016). Who Invented ‘Gloomy’? Lies People Want to Believe About Shakespeare. *Memoria di Shakespeare: a journal of Shakespearean Studies* 3: 21–45.
- Hopper, P. J. (1991). On some principles of grammaticization. In Traugott, E. C. & Heine, B. (Eds.), *Approaches to grammaticalization, Volume 1: Focus on theoretical and methodological issues*. Amsterdam and Philadelphia: John Benjamins. 17–35.
- Hoye, L. (2008). Evidentiality in discourse: A pragmatic and empirical account. In Romero-Trillo, J. (Ed.), *Pragmatics and Corpus Linguistics*. Berlin and New York: Mouton de Gruyter. 151–74.
- Ifantidou, E. (2001). *Evidentials and relevance*. Amsterdam and New York: John Benjamins.
- Jackendoff, R. S. (1972). *Semantic interpretation in generative grammar*. Cambridge, Mass.: The M.I.T. Press.
- Jankowski, B. & Tagliamonte, S. A. (2019). Supper or dinner? Sociolinguistic variation in the meals of the day *English World Wide* 40(2): 169–200.
- Kang, S. (2017). Evidential adverbs of clearly and obviously: a corpus-based analysis. *SNU Working Papers in English Linguistics and Language* 15: 68–79.
- Kerswill, P. & Cheshire, J. (2004-2007). Linguistic Innovators: The English of adolescents in London ESRC Research Grant (RES-000-23-0680).
- Kroch, A. S. (1989). Reflexes of grammar in patterns of language change. *Language Variation and Change* 1(3): 199–244.
- Labov, W. (1963). The social motivation of a sound change. *Word* 19: 273–309.
- . (1970). The study of language in its social context. *Studium Generale* 23(1): 30–87.
- . (1972). *Sociolinguistic patterns*. Philadelphia: University of Pennsylvania Press.
- . (1994). *Principles of linguistic change: Volume 1: Internal factors*. Cambridge and Oxford: Blackwell Publishers.
- . (2001). *Principles of linguistic change: Volume 2: Social factors*. Malden and Oxford: Blackwell Publishers.
- . (2003). Pursuing the cascade model. In Britain, D. & Cheshire, J. (Eds.), *Social*

- Dialectology: In honour of Peter Trudgill*. Amsterdam and Philadelphia: John Benjamins. 9–23.
- . (2007). Transmission and Diffusion. *Language* 83(2): 344–87.
- Lass, R. (1997). *Historical linguistics and language change*. Cambridge: Cambridge University Press.
- Lenker, U. (2010). *Argument and rhetoric: Adverbial connectors in the history of English*. Berlin: Mouton de Gruyter.
- Lewis, D. M. (2000). *Some emergent discourse connectives in English: Grammaticalization via rhetorical patterns*. PhD dissertation. University of Oxford.
- . (2002). Rhetorical motivations for the emergence of discourse particles, with special reference to English of course. *Belgian Journal of Linguistics* 16(1): 79–91.
- McMahon, A. M. S. (1994). *Understanding language change*. Cambridge: Cambridge University Press.
- Milroy, L. (2007). Off the shelf or under the counter? On the social dynamics of sound changes. In Cain, C. & Russom, G. (Eds.), *Studies in the history of the English language III: Managing chaos: Strategies for identifying change in English*. Berlin: Walter de Gruyter.
- Mitchell, G. (1976). Indicating the Truth of Propositions: A Pragmatic Function of Sentence Adverbs. *Papers from the Tveifh Regional Meeting of the Chicago Linguistic Society*. 495–505.
- Nevalainen, T. (2015). Descriptive adequacy of the S-curve model in diachronic studies of language change. University of Helsinki: VARIENG. <http://www.helsinki.fi/varieng/series/volumes/16/nevalainen/>.
- Nevalainen, T. & Raumolin-Brunberg, H. (2003). *Historical sociolinguistics: Language change in Tudor and Stuart England*. London: Pearson Education.
- Otheguy, R., Zentella, A. C. & Livert, D. (2007). Language and dialect contact in Spanish in New York: Toward the formation of a speech community. *Language* 83(4): 770–802.
- Payne, J., Huddleston, R. & Pullum, G. K. (2010). The distribution and category status of adjectives and adverbs. *Word Structure* 3(1): 31–81.
- Petré, P. & van de Velde, F. (2018). The real-time dynamics of the individual and the community in grammaticalization. *Language* 94(4): 867–901.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J. (1985). *A comprehensive grammar of the English language*. New York: Longman.
- R Core Team. (2007). A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing <http://www.R-project.org>.
- Saeed, J. I. (2016). *Semantics*. Malden and Oxford: Blackwell.
- Sankoff, D. & Thibault, P. (1981). Weak complementarity: Tense and aspect in Montreal French. In Johns, B. B. & Strong, D. R. (Eds.), *Syntactic Change*. Ann Arbor: University of Michigan Press. 205–16.
- Simon-Vandenberg, A.-M. (1992). The interactional utility of of course in spoken discourse. *Occasional Papers in Systemic Linguistics* 6: 213–26.
- Simon-Vandenberg, A.-M. & Aijmer, K. (2004). The expectation marker ‘of course’ in a cross-linguistic perspective. In Davidse, K. & Hayvaert, L. (Eds.), *Functional Linguistics and Contrastive Description*. Amsterdam and Philadelphia: John Benjamins. 13–43.
- . (2007). *The semantic field of modal certainty: A corpus-based study of English adverbs*.
- Smith, J. (2000). *Synchrony and diachrony in the evolution of English: Evidence from Scotland*.

- PhD dissertation, University of York.
- Strobl, C., Malley, J. & Tutz, G. (2009). An Introduction to Recursive Partitioning: Rationale, Application, and Characteristics of Classification and Regression Trees, Bagging, and Random Forests. *Psychological methods*, 14(4): 323–48.
- Suzuki, D. (2016). Form and function of the modal adverbbs: Recent linguistic change and constancy in British English. *Linguistics* 53(6): 1365–89.
- Swan, T. (1986). *Sentence adverbials in English: A synchronic and diachronic investigation*. PhD dissertation. Tromsø: University of Tromsø.
- . (1988). The development of sentence adverbs in English. *Studia Linguistica* 42(1): 1–17.
- Tagliamonte, S. A. (1996-1998). Roots of Identity: Variation and Grammaticization in Contemporary British English. Economic and Social Sciences Research Council (ESRC) of Great Britain. Reference #R000221842. (£25,643).
- . (2002). Comparative sociolinguistics. In Chambers, J. K., Trudgill, P. & Schilling-Estes, N. (Eds.), *Handbook of language variation and change*. Malden and Oxford: Blackwell Publishers. 729–63.
- . (2003-2006). Linguistic changes in Canada entering the 21st century. Research Grant. Social Sciences and Humanities Research Council of Canada (SSHRC). #410-2003-0005. <http://individual.utoronto.ca/tagliamonte/>
- Tagliamonte, S. A. & Baayen, R. H. (2012). Models, forests and trees of York English: *Was/were* variation as a case study for statistical practice. *Language Variation and Change* 24(2): 135–78.
- Tagliamonte, S. A. & D’Arcy, A. (2007). Frequency and variation in the community grammar: Tracking a new change through the generations. *Language Variation and Change* 19(2): 1–19.
- Tagliamonte, S. A., D’Arcy, A. & Rodriguez Louro, C. (2016). Outliers, impact and rationalization in linguistic change. *Language* 92(4): 824–49.
- Tagliamonte, S. A. & Hudson, R. (1999). Be like et al. beyond America: The quotative system in British and Canadian youth. *Journal of Sociolinguistics* 3(2): 147–72.
- Tagliamonte, S. A. & Jankowski, B. (2018). Golly, Gosh and Oh my God! What dialect corpora can tell us about swearwords. *American Speech* 95(1): 1–40.
- Team, R. D. C. (2007). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. <http://www.R-project.org>.
- Trask, R. L. (1993). *A dictionary of grammatical terms in linguistics*. London and New York: Routledge.
- Traugott, E. C. (1989). On the rise of epistemic meanings in English: An example of subjectification in semantic change. *Language* 65(1): 31–55.
- . (2014). On the function of the epistemic adverbs *surely* and *no doubt* at the left and right peripheries of the clause. In Beeching, K. & Detges, U. (Eds.), *Discourse functions at the left and right periphery: Crosslinguistic investigations of language use and language change*. Leiden and Boston: Brill. 72–91.
- Traugott, E. C. & Dasher, R. B. (2002). *Regularity in semantic change*. Cambridge: Cambridge University Press.
- Trudgill, P. J. (1974a). Linguistic change and diffusion: Description and explanation in sociolinguistic dialect geography. *Language in society* 3: 215–46.
- . (1974b). *The social differentiation of English in Norwich*. Cambridge: University of Cambridge Press.

- . (1986). *Dialects in contact*. Oxford: Blackwell Publishers.
- . (2011). *Sociolinguistic typology: Social determinants of linguistic complexity*. Oxford: Oxford University Press.
- Weinreich, U. (1953/1968). *Languages in contact*. The Hague: Mouton.
- Weinreich, U., Labov, W. & Herzog, M. (1968). Empirical foundations for a theory of language change. In Lehmann, W. P. & Malkiel, Y. (Eds.), *Directions for Historical Linguistics*. Austin: University of Texas Press. 95–188.
- Wichmann, A., Simon-Vandenberg, A.-M. & Aijmer, K. (2010). How prosody reflects semantic change: A synchronic case study of *of course*. In Cuyckens, H., Davidse, K. & Vandelanotte, L. (Eds.), *Subjectification, intersubjectification and grammaticalization*. Berlin: Mouton de Gruyter. 103–54.